7.24 TIMBER MANAGEMENT ALTERNATIVES

ALT-A

This alternative is from a recommendation presented to the CRT by Petitioner members of the CRT. Section 13 of ~~I~~it has been modified slightly ~~as indicated by~~ in response to public comment in that the previously underlined text has been deleted. The Department does not view this as a substantive change. Section 13 has also been included in Section 7.18 of the recovery strategy as a range-wide recommendation for Permitting. Citations to the Forest Practice Rules (FPR) have been clarified. Amendments made since the publication of the November 2003 Public Review Draft of the recovery strategy are indicated by underline and strike-out.

This alternative could be implemented in two different ways. The Commission could approve for this alternative for inclusion in the strategy as: 1) guidelines pursuant to FGC § 2112 for issuance of Incidental Take Permits under FGC § 2081(b) or consistency determinations under FGC § 2080.1 where these recommended measures would fully mitigate take and at the same time contribute to the recovery of coho salmon. The effect of this would be to streamline the permitting process as an incentive for recovery. In accordance with FGC § 2114, the guidelines would be part of the Commission's rulemaking for listing; or 2) ~~recommend~~ a recommendation to the Board of Forestry to implement it through a rulemaking proceeding to establish regulations that ensure that timber operations are consistent with the long-term survival of coho salmon.

Incidental take of coho salmon is authorized for otherwise lawful timber operations if they fully incorporate the following measures:

1. Within the watercourse and lake protection zone (WLPZ) for Class I waters, the minimum WLPZ width shall be 150 feet from the watercourse or lake transition line as defined in 14 CCR § 895.1 (2004) ~~of the 2002 FPR~~. At least 85% overstory canopy shall be retained within 100 feet of the watercourse or lake transition line, and at least 65% overstory canopy within the remainder of the WLPZ. The overstory canopy shall be composed of at least 25% overstory conifer post-harvest.
2. While attaining the canopy retention standards described in this section, recruitment of LWD debris to Class I watercourses shall be ensured by retaining the ten largest diameter confers (live or dead), on each side of the watercourse, per 330 feet of stream length, within 50 feet of the watercourse or lake transition line.
3. All new crossings shall either span the Class I watercourse or use an arched culvert with a natural bottom. All permanent watercourse

crossings that are constructed or reconstructed shall accommodate the estimated 100-year flood flow, including debris and sediment loads.

4. Where an inner gorge extends beyond a Class I WLPZ and slopes are greater than 55%, a special management zone shall be established beyond the WLPZ where the use of even aged regeneration methods is prohibited. This zone shall extend upslope to the first major break in slope (i.e., where the slope is less than 55% for a distance of 100 feet or more), or 300 feet as measured from the watercourse or lake transition line, whichever is less. Within this zone, methods and retention standards shall be as described in 14 CCR §§ 913.2, 933.2, and 9533.2. (2004)

5. For Class II watercourses, at least 85% overstory canopy shall be retained within 50 feet of the watercourse or lake transition line. In an additional outer zone, overstory canopy closure shall be at least 65%. The overstory canopy in each zone shall be composed of at least 25% overstory conifer canopy post-harvest. The outer zone shall be 25 feet in width where side slope class is 30-50%. The outer zone shall be 75 feet in width where the slope class is greater than 50%.

6. While attaining the canopy retention standards described in this section, recruitment of LWD debris to Class II watercourses shall be ensured by retaining the five largest conifers (dead or alive) on each side of the watercourse per 330 feet of stream channel length, within 50 feet of the watercourse of lake transition line.

7. Where an inner gorge extends beyond a Class II WLPZ and slopes are greater than 55%, a special management zone shall be established beyond the WLPZ where the use of even aged regeneration methods is prohibited. This zone shall extend upslope to the first major break in slope (i.e., where the slope is less than 55% for a distance of 100 feet or more) or 200 feet as measured from the watercourse of lake transition line, whichever is less. Within this zone, methods and retention standards shall be as described in 14 CCR §§ 913.2, 933.2, and 953.2. (2004).

8. All permanent Class II watercourse crossings that are constructed or reconstructed shall accommodate the estimated 100-year flood flow, including debris and sediment loads and be placed in the bottom of the natural channel and capable of capturing low flows.

9. For Class III waters, at least a 25-foot protection zone on each side of the watercourse for slopes less than 30% and at least a 50-foot protection zone on each side of the watercourse for slopes greater than 30%. Retain all trees situated within the channel zone (i.e., bank-full channel) and trees that have boles that overlap the edge of the bank-full channel. Within the protection zones at least 50% of the understory

vegetation shall be left post-harvest in an evenly distributed condition. All regeneration conifers, snags, LWD, and hardwoods shall be retained within the Class III protection zones except removal as necessary for yarding and crossings. Commercial timber operations will be allowed to "yard through" a Class III riparian management zone. Burning for purposes of site preparation shall not be initiated in the protection zones.

10. All permanent Class III watercourse crossings that are constructed or reconstructed shall accommodate the estimated 100-year flood flow, including debris and sediment loads and be placed in the bottom of the natural channel and capable of capturing low flows.

11. Use of any unpaved road segments within or appurtenant to a THP area shall cease when any of the following occur:

    a. Precipitation is sufficient to generate overland flow off the road surface; or

    b. Use of any portion of the road results in rutting of the road surface. Road use shall not resume until the rod is dry. "Dry" is defined as a road surface that is well drained; and is not rutting, discharging fine sediments, or causing a visible turbidity increase in a ditch or on a road surface that drains into a Class I, II, or III watercourse. Access for road inspection and access to correct emergency situation shall be allowed at any time by a vehicles rated one ton or less.

12. While participating in THP pre-harvest inspections the Department shall place a high priority on appropriate classification of all Class I, II, and III watercourses and identification and remediation of road-related sources of sediment likely to recruit into watercourses.

13. The Department shall prioritize ~~available~~ staff resources to review and process Lake or Streambed Alteration Agreements to ensure that no proposed streambed crossing or alteration activity may have a substantial impact on coho salmon or habitat upon which coho salmon depend goes unreviewed. Agreements shall provide for necessary fish passage/bypass flows and erosion prevention. All mitigation measure identified under the Streambed Alteration Agreement as necessary to protect coho salmon or the species' habitat within the bed, bank, or channel shall be fully implemented by the permittee undertaking the activity. The Department shall prioritize ~~available~~ staff resources to ensure enforcement of the terms and conditions for any 1602~~1 or 1603~~ agreement.

ALT-B

Sections 1 through 10 of this recommendation are from a recommendation that was presented to the CRT by forest landowner representatives of the CRT. Sections 11-18 were added by the Department. The addition of Sections 19 and 20, and any amendments to Sections 11-18 or mechanisms for implementing this alternative were made since the publication of the November 2003 Public Review Draft of the recovery strategy in response to public comments. Amendments are indicated by underline and strike-out.

There are two ways in which Sections 16, 17 and 18 of this alternative could be implemented. The Commission could: (1) approve Sections 17 and 18 for inclusion in the strategy as ~~1)~~ a recommendation to CDF and the Department to improve within existing law and authorities the implementation and enforcement of the Forest Practices Rules to ensure that timber operations are consistent with recovery of coho salmon. If existing law and authorities are found to be inadequate to provide for such improvements, then the Commission could alternately recommend that the Department and/or CDF seek legislation to provide such authority. This means that CDF would support DFG in a site-specific determination on a THP that any of these measures should be applied to protect coho salmon; or (2) approve Sections 16, 17, and 18 as ~~implementation as~~ guidelines pursuant to FGC § 2112 for issuance of Incidental Take Permits under FGC § 2081(b) or consistency determinations under FGC § 2080.1 where these recommended measures, in combination with the existing Threatened and Impaired Watershed Rules[1], would fully mitigate take and at the same time contribute to the recovery of coho salmon. The effect of this would be to streamline the permitting process as an incentive for recovery. In accordance with FGC § 2114, the guidelines would be part of the Commission's rulemaking for listing.

1. The CRT recommends government commitment of adequate financial, material, and personnel support for the life of the Recovery Strategy for on-the-ground recovery actions, identified in the Recovery Strategy. Possible funding mechanisms may include:

    a. Legislation specifically identifying funding for recovery;

    b. Cost-share programs with private landowners, stakeholder groups and local governments; and

[1] Cal. Code Regs, tit. 14, §§ 895.1, 898, 914.8, 934.8, 954.8, 916, 936, 956, 916.2, 936.2, 956.2, 916.9, 936.9, 956.9, 916.11, 936.11, 956.11, 916.12, 936.12, 956.12, 923.3, 943.3, 963.3, 923.9, 943.9, 963.9. (2004) [Hereinafter referred to collectively as "Threatened and Impaired Watershed Rules (2004)".]

c. Endowment and/or grant programs cooperatively with private sources.

2. The Department should provide technical expertise to support appropriate cooperatively undertaken recovery actions, which may include:

   a. Technical advisors to assist in the development of restoration proposals;

   b. Technical expertise to assist in the implementation of recovery activities on-the-ground; and

   c. Technical expertise to assist in training and education on coho restoration projects.

3. The Department should develop and implement a program to design and implement a coho recovery plan for individual CALWATER Planning Watersheds. The program should promote and enable cooperative working relationships between agencies, landowners and residents. This program should include:

   a. Federal and state funding to assist landowners in performing watershed analysis in a manner usable by the Department;

   b. A systematic evaluation at the watershed level to identify key limiting factors for the recovery of coho salmon;

   c. Identification of site-specific sources and locations of the key limiting factors;

   d. Identification of restoration projects for watershed transportation systems, fish passage, slope stabilization measures, erosion control measures and drainage structures;

   e. Identification of beneficial management practices to protect existing values; and

   f. Use of these plans and the data that support them as the principle reference document, which would save landowners and/or project proponents additional costs associated with repetitive analysis and paperwork for each project.

4. The Department should develop an information repository system for individual Planning Watersheds that utilizes and builds upon existing information, adding new information as it becomes available, while ensuring adequate confidentiality for information specifically pertaining to an individual's private property.

5. The Department should promote and support programmatic approaches to address key limiting factors in each CALWATER Planning Watershed with a watershed plan. Include these components:

a. Where appropriate and costs to landowners are offset by monetary assistance, technical assistance or regulatory incentives, encourage landowners to develop and implement Road Management Plans that contribute to the restoration of coho salmon habitat;

b. Where appropriate and the costs to landowners are offset by incentives, encourage the use of a licensed engineer to assist in the design and construction of watercourse crossings;

c. Continuing education and training (classroom and field) to ensure watercourse crossings are appropriately designed, constructed and maintained;

d. Cooperative habitat restoration projects that extend across ownerships to address habitat restoration efforts in a coordinated and cost effective manner; and

e. State funding to assist landowners to implement coordinated watershed riparian vegetation improvement programs that:

i. Identify areas within the riparian zone where planting of riparian vegetation, including conifers, to improve coho habitat is appropriate; and

ii. Promote vegetation modification (e.g., thinning, removal of undesired competitive vegetation) to accelerate riparian vegetation recovery and enhancement for coho habitat.

6. The Department should set up a long term monitoring system that measures the implementation and effectiveness of ~~FPR~~ Forest Practice Rules in effect at the time of the monitoring. The monitoring shall measure the effectiveness of the rules for maintenance and recovery of coho salmon and its habitat.

7. Encourage CDF and California Geological Survey in concert with the Board of Forestry (through the Monitoring Study Group) to develop a monitoring program to evaluate whether mitigation measures implemented by Registered Professional Foresters as part of THPs are effectively reducing the risk of mass soil movement associated with harvesting operations, including road and landing construction. Any monitoring system should be designed to compare harvested areas to non-harvested areas so it can be determined whether harvesting, road and landing construction activities increase the likelihood of mass soil movement. The THP work completion report and the Monitoring Study Group's Hillslope Monitoring Program, as well as periodic air photo flights and photo interpretation, could provide the basis for monitoring and evaluation.

8. CDF document voluntary efforts taken by forest landowners beneficial to coho salmon that:

a. Provide mitigation measures that exceed FPRs requirements; and/or

b. Are identified in specific CALWATER Watershed Recovery Plans.

9. The Department should develop a system to evaluate implementation and effectiveness of voluntary efforts to recover coho populations.

10. The Department should develop, with appropriate peer review, a long-term consolidation and analysis of resource assessments and monitoring data.

11. The Department should collaborate with CDF and appropriate industry groups to provide watercourse training and roads assessment watershed academy.

12. Acquire conservation easements or land in fee title from willing landowners to protect coho salmon habitat.

13. Support continued implementation of the Threatened and Impaired Watershed Rules (2004) ~~FPR regarding Protection and Restoration in Watersheds with Threatened or Impaired Values. (Title 14 California Code of Regulations, § 916.9.)~~.

14. The Department should seek funding for staff to improve effectiveness of the Department timberland conservation program.

15. To the extent Department staff is available, continue participation in full review of THPs and participation in ~~and~~ other timberland conservation activities associated with managing timberlands.

16. In watersheds with coho salmon, to the extent staff are available, the Department will ~~include~~ prepare a "coho salmon biological assessment" when acting as a Lead or Responsible agency under the California Environmental Quality Act (CEQA) for ~~in~~ timberland conservation activities, including ~~preharvest inspection reports.~~ but not limited to the review of timber harvesting plans. A "coho salmon biological assessment" is an assessment by the Department of a projects effects, if any, on coho salmon. The biological assessment will include conclusions by the Department regarding potential for the project to "jeopardize" the long-term survival of or "take" coho salmon. It will also include the Department's assessment of the significance of project impacts for purposes of "mandatory findings of significance" under 14 CCR § 15065 (a), (b), and (c).

17. In reviewing THPs and/or issuing incidental take authorizations in watersheds (except San Joaquin and Sacramento River drainages) which have historic or current coho salmon or restorable coho salmon habitat, on a case-by-case basis the Department will recommend the

following measures in this Section 17 and Section 18 below (which assume continuation of the existing Threatened and Impaired Watershed Rules and, to the extent the rules are discontinued, incorporate them herein by this reference), as appropriate, based on "substantial evidence", as the term is defined by 14 CCR § 15384. CDF will support Department recommendations by requiring them in THPs to ensure that timber operations are consistent with recovery of coho salmon:

a. For Class I watercourses, retain the ten largest conifers within 100' of the watercourse or lake transition line on each side of the watercourse, along each 330' segment of the watercourse;

b. For Class I watercourses, within the watercourse and lake protection zone retain trees that provide direct shading to pools, consistent with the conifer retention standards in the Threatened and Impaired Watershed Rules;

c. For Class II watercourses, where an inner gorge is present, establish a special management zone beyond the WLPZ where the use of even-aged regeneration methods is prohibited. This special management zone shall extend upslope to the first major break in slope (i.e., where the slope is less than 55% for a distance of 100 feet or more) or 200 feet as measured from the watercourse or lake transition line, whichever is less. A registered geologist shall be consulted and additional recommendations for slope stability implemented;

d. For Class II watercourses, enhance riparian buffers for temperature and sediment management in accordance with applicable provisions of section 18 below;

e. ~~For Class III watercourses, w~~Where a headwall swale is present: 1) utilize only single-tree selection prescriptions as per 14 CCR § 913.2(a)(2)(A) (2004) that retain the diameter distribution present before timber operations or a "thinning from below" prescription as per 14 CCR § 913.3(a) (2004) that retains dominant and codominant trees; and 2) require review of timber operations by a certified engineering geologist;

f. For Class III watercourses in or adjacent to harvest units where even-aged management is proposed: 1) require a minimum 25-foot-wide WLPZ on each side of the watercourse for slopes less than or equal to 30% and a minimum 50-foot-wide WLPZ on each side of the watercourse for slopes greater than 30%; 2) retain all trees situated within the channel zone(as defined in 14 CCR § ~~985~~895.1 (2004), i.e., "channel zone") and trees that have boles that overlap the edge of the channel zone.; 3) within the WLPZ, at

least 50% of the understory vegetation shall be left post-harvest in an evenly distributed condition; 4) within the WLPZ, retain all snags, LWD, hardwoods, and regeneration conifers (10 inches dbh or less), except where necessary to allow for cable yarding corridors, safety, or crossing construction; 5) within the WLPZ, prohibit initiation of burning for purposes of site preparation; and 6) allow commercial timber operations to "yard through" a Class III WLPZ.

g. For construction, reconstruction, upgrades, maintenance, and operation of roads within and appurtenant to THPs detailed site specific recommendations will be developed consistent with the *Handbook for Forest and Ranch Roads* (prepared by Pacific Watershed Associates, 1994c, for the Mendocino County Resource Conservation District in cooperation with the CDF and the U.S. Soil Conservation Service. Mendocino Resource Conservation District, Ukiah, California. 163 pages.).

18. On all ~~first and second hydrologic order~~ intermittent or perennial Class II watercourses which are mapped on current 1:24,000 scale U.S. Geological Survey topographic map and are tributary to Class I watercourses with coho salmon:

    a. Inner Band: From 0-50 feet: Retain 85% post-harvest overstory canopy and do not reduce conifer overstory below 25% (absolute, not relative measure).

    b. Outer Band with 0-30% Slope: From 50-75 feet retain 65% post-harvest overstory canopy and do not reduce conifer overstory canopy below 25% (absolute, not relative measure).

    c. Outer Band with 31-50% Slope: From 50-100 feet, retain 65% post harvest overstory canopy and do not reduce conifer overstory canopy below 25% (absolute, not relative measure).

    d. Outer Band with >50% Slope: From 50-125 feet, retain 65% post-harvest overstory canopy and do not reduce conifer overstory canopy below 25% (absolute, not relative measure).

19. Recommend that a "proof of concept" pilot program be developed and implemented to test a mathematical or scientific method of cumulative effects analysis as was suggested in the 2001 report, "A Scientific Basis for the Prediction of Cumulative Watershed Effects" (otherwise known as the "Dunne Report", by the U.C. Committee on Cumulative Watershed Effects. The pilot program would be developed and implemented by a panel of experts such as those at U.C. in cooperation with DFG, CDF, and SWRCB.

20. Recommend that CDF and the Board of Forestry work with DFG and other interested agencies and stakeholders to establish a procedure for THPs to document and evaluate the implementation and effectiveness of coho-related mitigation measures prior to the official completion inspection by CDF and other agencies.

ALT-C

Sections 1 through 10 of this recommendation are adopted verbatim (with no amendments) from a recommendation that was presented to the CRT by forest landowner representatives of the CRT. Sections 11-17 were added by the Department. Any amendments to Sections 11-17 were made since the publication of t he November 23 Public Review Draft of the recovery strategy in response to public comments. Amendments are indicated by underline and strike-out.

1. CRT recommends government commitment of adequate financial, material, and personnel support for the life of the Recovery Strategy for on-the-ground recovery actions, identified in the Recovery Strategy. Possible funding mechanisms may include:
    a. Legislation specifically identifying funding for recovery;
    b. Cost-share programs with private landowners, stakeholder groups and local governments; and
    c. Endowment and/or grant programs cooperatively with private sources.
2. The Department should provide technical expertise to support appropriate cooperatively undertaken recovery actions, which may include:
    a. Technical advisors to assist in the development of restoration proposals;
    b. Technical expertise to assist in the implementation of recovery activities on-the-ground; and
    c. Technical expertise to assist in training and education on coho restoration projects.
3. The Department should develop and implement a program to design and implement a coho recovery plan for individual CALWATER Planning Watersheds. The program should promote and enable cooperative working relationships between agencies, landowners and residents. This program should include:
    a. Federal and state funding to assist landowners in performing watershed analysis in a manner usable by the Department;

b. A systematic evaluation at the watershed level to identify key limiting factors for the recovery of coho salmon;

c. Identification of site-specific sources and locations of the key limiting factors;

d. Identification of restoration projects for watershed transportation systems, fish passage, slope stabilization measures, erosion control measures and drainage structures;

e. Identification of beneficial management practices to protect existing values; and

f. Use of these plans and the data that support them as the principle reference document, which would save landowners and/or project proponents additional costs as sociated with repetitive analysis and paperwork for each project.

4. The Department should develop an information repository system for individual Planning Watersheds that utilizes and builds upon existing information, adding new information as it becomes available, while ensuring adequate confidentiality for information specifically pertaining to an individual's private property.

5. The Department should promote and support programmatic approaches to address key limiting factors in each CALWATER Planning Watershed with a watershed plan. Include these components:

a. Where appropriate and costs to landowners are offset by monetary assistance, technical assistance or regulatory incentives, encourage landowners to develop and implement Road Management Plans that contribute to the restoration of coho salmon habitat;

b. Where appropriate and the costs to landowners are offset by incentives, encourage the use of a licensed engineer to assist in the design and construction of watercourse crossings;

c. Continuing education and training (classroom and field) to ensure watercourse crossings are appropriately designed, constructed and maintained;

d. Cooperative habitat restoration projects that extend across ownerships to address habitat restoration efforts in a coordinated and cost effective manner; and

e. State funding to assist landowners to implement coordinated watershed riparian vegetation improvement programs that:

i. Identify areas within the riparian zone where planting of riparian vegetation, including conifers, to improve coho habitat is appropriate and

ii. Promote vegetation modification (e.g., thinning, removal of undesired competitive vegetation) to accelerate riparian vegetation recovery and enhancement for coho habitat.

6. The Department should set up a long term monitoring system that measures the implementation and effectiveness of FPR in effect at the time of the monitoring. The monitoring shall measure the effectiveness of the rules for maintenance and recovery of coho salmon habitat.

7. Encourage CDF and California Geological Survey in concert with the Board of Forestry (through the Monitoring Study Group) to develop a monitoring program to evaluate whether mitigation measures implemented by Registered Professional Foresters as part of THPs are effectively reducing the risk of mass soil movement associated with harvesting operations, including road and landing construction. Any monitoring system should be designed to compare harvested areas to non-harvested areas so it can be determined whether harvesting, road and landing construction activities increase the likelihood of mass soil movement. The THP work completion report and the Monitoring Study Group's Hillslope Monitoring Program, as well as periodic air photo flights and photo interpretation, could provide the basis for monitoring and evaluation.

8. CDF document voluntary efforts taken by forest landowners beneficial to coho salmon that:

   a. Provide mitigation measures that exceed FPRs requirements; and/or

   b. Are identified in specific CALWATER Watershed Recovery Plans.

9. The Department should develop a system to evaluate implementation and effectiveness of voluntary efforts to recover coho populations.

10. The Department should develop, with appropriate peer review, a long-term consolidation and analysis of resource assessments and monitoring data.

11. The Department should collaborate with CDF and appropriate industry groups to provide watercourse training and roads assessment watershed academy.

12. Acquire conservation easements or land in fee title from willing landowners to protect coho salmon habitat.

13. The Department should seek funding for staff to improve effectiveness of the Department timberland conservation program.

14. To the extent Department staff is available, continue participation in full review of THPs and participation and other timberland conservation activities associated with managing timberlands.

15. In watersheds with coho salmon, to the extent staff are available, the Department will ~~include~~ prepare a "coho salmon biological assessment" when acting as a Lead or Responsible agency under the California Environmental Quality Act (CEQA) for ~~in~~ timberland conservation activities, including ~~preharvest inspection reports~~ but not limited to the review of timber harvesting plans. A "coho salmon biological assessment" is an assessment by the Department of a projects effects, if any, on coho salmon. The biological assessment will include conclusions by the Department regarding potential for the project to "jeopardize" the long-term survival of or "take" coho salmon. It will also include the Department's assessment of the significance of project impacts for purposes of "mandatory findings of significance" under 14 CCR § 15065 (a), (b), and (c).

16. ~~Support continued implementation of the FPR regarding Protection and Restoration in Watersheds with Threatened or Impaired Values (14 CCR § 916.9) for five or more years to allow for five years of monitoring to determine whether these rules are consistent~~ In conjunction with the Department of Forestry and Fire Protection, qualified landowners representatives and experts, and qualified independent scientists with appropriate expertise, and consistent with the availability of staff, the Department will monitor for five years (or more if necessary to develop an adequate sampling regime) the implementation of the FPR in effect at the time to determine whether these rules are consistent with the long-term survival of coho salmon.

17. If the Department determines ~~after five years~~ results of monitoring, based on substantial evidence, as the term is defined by 14 CCR § 15384, conclude that the implementation of the FPR ~~regarding Protection and Restoration in Watersheds with Threatened and Impaired Values (14 CCR § 916.9.)~~ are not ~~consistent with~~ providing adequate protection for the long-term survival of coho salmon, the Department in cooperation with CDF and interested stakeholders will develop ~~and present to the Board of Forestry recommendations for improvements to the rules~~ recommendations to ensure adequate protection for the long-term survival of coho salmon.